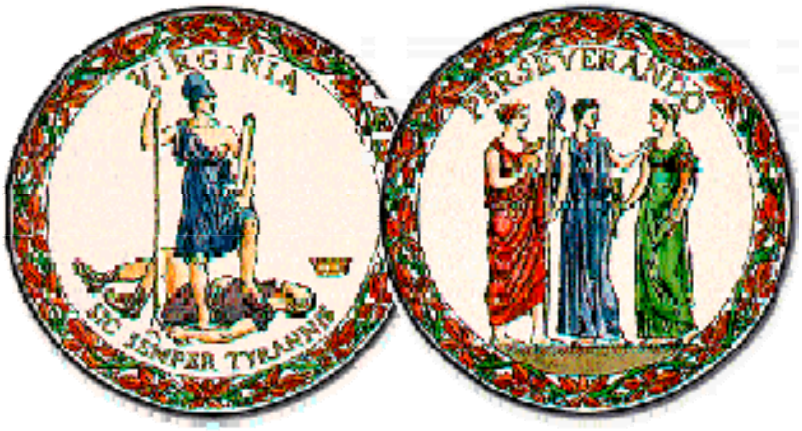
MANUAL OF THE STRUCTURE AND BRIDGE DIVISION

PART 5

PRESTRESSED CONCRETE ADJACENT MEMBER STANDARDS



VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT GOVERNANCE DOCUMENT

VDOT Manual of the Structure and Bridge Division:

Part 5 - Prestressed Concrete Adjacent Member Standards

OWNING DIVISION: Structure and Bridge

DATE OF ISSUANCE: 4/28/2023

PART 5
PRESTRESSED CONCRETE ADJACENT MEMBER STANDARDS

TABLE OF CONTENTS

* Indicates 11 x 17 sheet; all others are 8 ½ x 11.

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PART 5
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The prestressed concrete voided slab standards include slab widths of 3'-0" and 4'-0" and depths of 15", 18" and 21". In general, the slabs are similar to the Precast/Prestressed Concrete Institute (PCI) standards and are economical for spans in the 25-50 foot range. For section properties, weights, etc., see Part 2, Chapter 12, of this manual. Charts are developed to assist the designer in selecting economic slab sizes.

The prestressed concrete box beam standards include beam widths of 3'-0" and 4'-0" and depths of 27", 33", 39" and 42". In general, the beams are similar to the PCI standards and are economical for spans in the 50-80 foot range. For section properties, weights, etc., see Part 2, Chapter 12, of this manual. Charts are developed to assist the designer in selecting economic beam sizes.

Detail series are developed for transverse post-tensioning and Virginia Adjacent Member Connections (VAMC). For asphalt overlays, VAMC details shall be used where skew exceeds 10 degrees. For the remaining cases, contact the District Structure and Bridge Engineer for design approval on which detail type to use. See Part 2, Chapter 12, of this manual for additional requirements and guidelines including overlay type.

The prestressed concrete inverted T-beam standards include 6'-0" wide interior inverted T-beams with tapered webs and exterior slab widths between 1'-8" and 4'-8". All member depths are 18". For development information, span and skew limitations, section properties, weights, etc., see Part 2, Chapter 12, of this manual.

Refer to notes to designer for specific comments on each standard sheet.

The designer must consider the effects of net camber at release (including camber tolerance) and 1/4" per foot cross slope when setting the bituminous overlay thickness at face of parapet/railing curb. Parapet/railing heights and dimensions for reinforcing steel shown on the parapet/railing standards may require adjustments. For required adjustments, see Notes to Designer for parapet/railing standards.

Completion of the project block, title block and lower left corner shall be in accordance with the requirements of File Nos. 04.04-1 thru -2 of Part 2 of this manual and as specified herein.

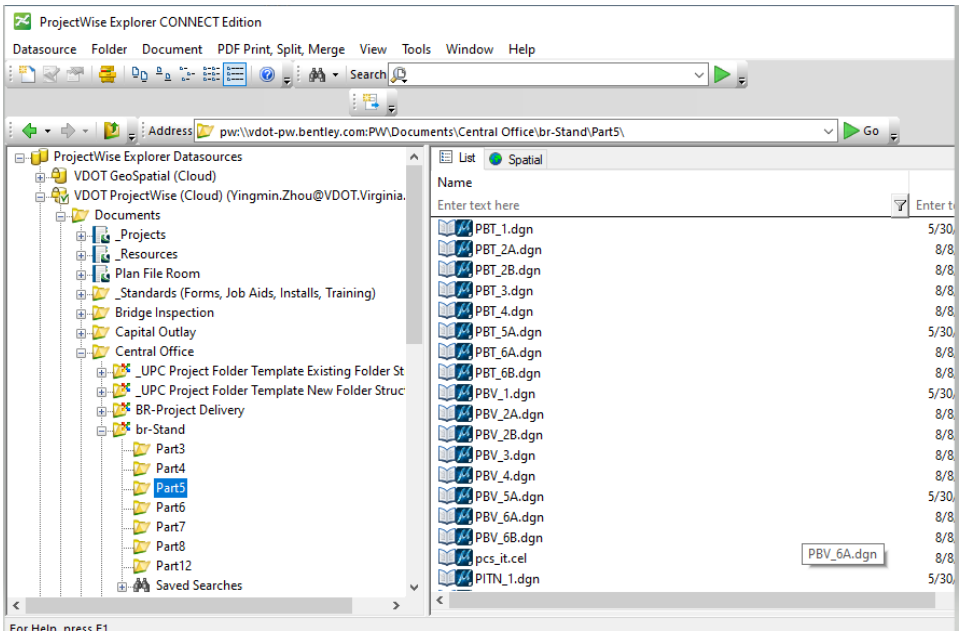
If a standard sheet is modified by the designer, the letters "MOD." (without quotes) shall be added behind the standard designation in the lower left portion of the border, e.g., PST-1 MOD. Completing items on the standard that are indicated in the NOTES TO DESIGNER are not considered to be modifications. Minor modifications do not require approval (except for those proposed by Concessionaire/Design-Builder). See Part 1, Section Pre.02 of this manual for definition of minor modifications and modifications not considered minor.

Modifications not considered minor require approval. See Part 1, Section Pre.02 for the required approval format and approval authority.

In general, in the title block (lower right hand corner of sheet) Designed, Drawn and Checked are blank and need to be filled in with the appropriate initials. For standard sheets without any design or detailing requirements, Designed, Drawn and Checked are filled in with "S&B DIV." If the design or details are modified, these fields should be filled in with initials as appropriate.

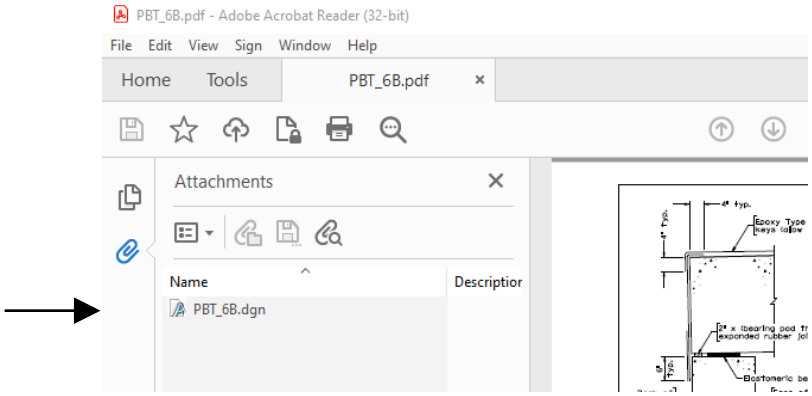
The CADD standard beam sheets are located in ProjectWise (see below). The CADD file name for the standard sheet corresponds with the file number (name of standard sheet) as listed in the Table of Contents (minus the dash). For example, standard PST-3 is file pst3.dgn.

Three cell libraries (PSC_VS.cel, PSC_BB.cel and PSC_IT.cel) are included with the standards to allow the designer to add the required details on the standard sheets for voided slab, box beam and inverted T-beam bridges. The PSC_VS, PSC_BB and PSC_IT sheets included herein depict the cells found in the cell libraries along with the name of the cell, an image of the cell, a description of the cell and the origin of cell. The origin of cell is indicated by a star ★. To attach a cell library, use the pull down menu in MicroStation under ELEMENT – CELLS and select FILE to get a drop-down listing of available cell libraries.

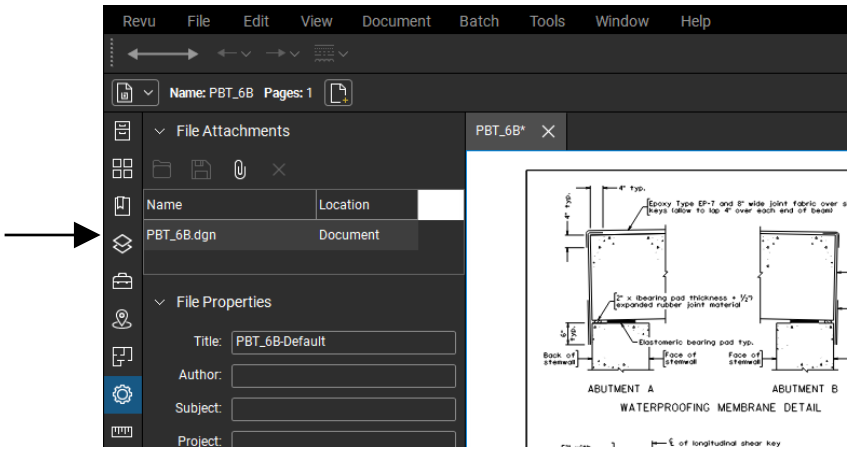


The MicroStation DGN file is attached to the PDF file for each standard. To access the DGN, save the PDF to a local computer and then open the PDF.

If opening the PDF with Adobe, the DGN attachment is in the upper left corner under Attachments.



If opening the PDF with Bluebeam, click on the Properties icon . The DGN attachment is shown on the upper left corner.



The complete manual in one PDF file with no links may be accessed with the link below.

Full manual no links

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, 23219-2000

Stephen Brich
COMMISSIONER

April 28, 2023

SUBJECT: Manual of the Structure and Bridge Division – Part 5
Prestressed Concrete Adjacent Member Standards

MEMORANDUM

TO: Holders of Manual

VOIDED:

None

NEW ISSUES:

None

REVISIONS:

File Number	Description of change(s)
INSTR-1	Re-worded the approval requirements for modifications to standards so that it refers to Part 1 instead of repeating Part 1.
INSTR-2	Revised 2nd paragraph to refer to ProjectWise instead of Falcon. Added a screenshot from ProjectWise.
INSTR-3	Revised instructions for accessing dgn files attached to pdf files. Deleted instructions for printing and eliminated INSTR-4.
PST-6A, -6B PSV-6A, -6B PBT-6A, -6B PBV-6A, -6B, PITN-6	Updated the joint fabric note to refer to the New Product Evaluation List.

Junyi Meng, P.E.
Assistant State Structure and Bridge Engineer

For: Gregory L. Henion, P.E.
State Structure and Bridge Engineer

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, 23219-2000

Stephen Brich
COMMISSIONER

August 8, 2018

SUBJECT: Manual of the Structure and Bridge Division – Part 5
Prestressed Concrete Adjacent Member Standards

MEMORANDUM

TO: Holders of Manual

VOIDED:

None

NEW ISSUES:

None

REVISIONS:

File Number	Description of change(s)
TOC-1 thru -5	Revised dates.
PST-2A and -2B	Updated special provision name referenced in Engineered Cementitious Composite (ECC) concrete note.
PST-3 and -4	Removed seat adjustment note and content covered by 2016 Road and Bridge Supplemental Section 405 from design camber note. Revised CAMBER DIAGRAM. Added DEAD LOAD DEFLECTION DIAGRAM title for cell placement.
PST-6A and -6B	Added adjustment note removed from other standard sheet and updated. Removed references to the publication year of the Specifications from notes.
PSV-2A and -2B	Updated special provision name referenced in Very High Performance Concrete (VHPC) note.
PSV-3 and -4	Removed seat adjustment note and content covered by 2016 Road and Bridge Supplemental Section 405 from design camber note. Revised CAMBER DIAGRAM. Added DEAD LOAD DEFLECTION DIAGRAM title for cell placement.

REVISIONS (cont'd):

File Number	Description of change(s)
PSV-6A and -6B	Added adjustment note removed from other standard sheet and updated. Removed references to the publication year of the Specifications from notes.
PBT-2A and -2B	Updated special provision name referenced in Engineered Cementitious Composite (ECC) concrete note.
PBT-3 and -4	Removed seat adjustment note and content covered by 2016 Road and Bridge Supplemental Section 405 from design camber note. Revised CAMBER DIAGRAM. Added DEAD LOAD DEFLECTION DIAGRAM title for cell placement.
PBT-6A and -6B	Added adjustment note removed from other standard sheet and updated. Removed references to the publication year of the Specifications from notes.
PBV-2A and -2B	Updated special provision name referenced in Very High Performance Concrete (VHPC) note.
PBV-3 and -4	Removed seat adjustment note and content covered by 2016 Road and Bridge Supplemental Section 405 from design camber note. Revised CAMBER DIAGRAM. Added DEAD LOAD DEFLECTION DIAGRAM title for cell placement.
PBV-6A and -6B	Added adjustment note removed from other standard sheet and updated. Removed references to the publication year of the Specifications from notes.
PITN-3 and -4	Removed seat adjustment note and content covered by 2016 Road and Bridge Supplemental Section 405 from design camber note. Revised CAMBER DIAGRAM. Added DEAD LOAD DEFLECTION DIAGRAM title for cell placement.
PITN-6	Added adjustment note removed from other standard sheet and updated. Removed references to the publication year of the Specifications from notes.
CELLINDEX-1 thru -5	Revised dates.
CELLINDEX-5	Added ITN3DLDD and changed ITN34DLDD to ITN4DLDD. Updated File Numbers of cell depictions.
PSCS-24 and -55	Inserted cell depictions for ST34DLDD and SV34DLDD.
PSCB-24 and -55	Inserted cell depictions for BT34DLDD and BV34DLDD.
PCIT-1 thru -5	Updated number of sheets in footer.
PCIT-6	Inserted sheet for ITN3DLDD depiction.
PCIT-7 thru -13	Updated sheet and file numbers.
PCIT-9	Changed cell name from ITN34DLD to ITN4DLDD and inserted cell depiction. Moved ITN4ELVS to next sheet.
PCIT-10	Added ITN4ELVS from previous sheet.

RETAIN THIS MEMO IN FRONT OF INDEX TO PART 5

/original signed/
Junyi Meng, P.E.
Assistant State Structure and Bridge Engineer

For: Kendal R. Walus, P.E.
State Structure and Bridge Engineer

RELEASE LETTERS

PART 5
PRESTRESSED CONCRETE ADJACENT MEMBER STANDARDS

A complete set of all release (revision) letters is located at the following link:

http://www.virginiadot.org/business/bridge_manual_archives_part_5.asp